

What is claimed is:

1. A datagram transmission device wherein;
  - an identification key is generated using information which is stored in a received datagram and is used for transmission control;
  - a transmission control rule corresponding to said identification key is selected from a transmission control rule list;
  - and transmission of said datagram is controlled in accordance with the selected transmission control rule.
2. The datagram transmission device according to claim 1 comprising:
  - attribute information searching means that searches combinations of attribute information employed for transmission control using the destination address of the received datagram;
  - identification key generation means that reads from said datagram said attribute information contained in the search result of said attribute information searching means and generates said identification key corresponding to the value of said attribute information that has been read;
  - transmission control decision means that selects on a transmission control rule using said identification key generated by said identification key generation means; and
  - transmission control execution means that controls transmission in accordance with a transmission control rule selected by said transmission control decision means.

3. The datagram transmission device according to claim 2  
wherein said attribute information searching means comprises:

an information table that stores information indicating  
combinations of said attribute information; and

5 address searching means that searches the indexes of  
said information table using said destination address.

4. The datagram transmission device according to claim 3  
wherein said identification key generation means generates  
said identification key including said index obtained by the  
10 searching of said address searching means.

5. The datagram transmission device according to claim 2  
wherein said identification key generation means generates  
said identification key using a compressed value of the value  
of said attribute information of one or more types.

15 6. The datagram transmission device according to claim 2  
wherein said transmission control decision means comprises:

an action table that stores a plurality of types of  
execution content of said transmission control; and

hash searching means that searches the indexes of said  
20 action table by hash searching using said identification key.

7. The datagram transmission device according to claim 3  
wherein said information table stores destination address  
execution information that indicates the execution content  
when said transmission control is only transmission; and

25 said transmission control execution means executes said  
transmission when said destination address execution  
information has been input.

8. The datagram transmission device according to claim 2 wherein said attribute information of at least one or more types is information belonging to the fourth layer or a layer thereabove of the protocol.
- 5       9. The datagram transmission device according to claim 2 wherein said attribute information searching means searches combinations of said attribute information using information belonging to the second layer of the protocol and said destination address.
- 10      10. The datagram transmission device according to claim 9 wherein said information belonging to the second layer of the protocol is a virtual channel identifier of the asynchronous transfer mode.
11. The datagram transmission device according to claim 1  
15 comprising:
- attribute information conversion means that reads attribute information of one or a plurality of types from a received datagram, individually determines an index value corresponding to the value of these items of attribute information and outputs one or a plurality of said index values obtained by said determination as respective conversion results;
- identification key generation means that generates an identification key including said index value input from said  
20 attribute information conversion means;
- transmission control decision means that decides on the execution content of transmission control using said

identification key generated by said identification key generation means; and

transmission control execution means that executes transmission control decided upon by said transmission control decision means.

5 12. The datagram transmission device according to claim 11 wherein said attribute information conversion means comprises a conversion table that stores the correspondence relationship of the values of said attribute information and  
10 said index values, for each type of said attribute information.

13. The datagram transmission device according to claim 11 wherein said transmission control decision means comprises:

15 an action table that stores a plurality of types of execution content of said transmission control; and  
hash searching means that searches the indexes of said action table by hash searching using said identification key.

14. The datagram transmission device according to claim 11 further comprising source address conversion means that  
20 converts the source address read from a received datagram into an index value by a prescribed method and sends this to said identification key generation means; and

25 said identification key generation means generates said identification key including said index value input from said source address conversion means.

15. The datagram transmission device according to claim 11 further comprising destination address conversion means that

converts the destination address read from a received datagram into an index value by a prescribed method and sends this to said identification key generation means; and

5           said identification key generation means generates said identification key including said index value input from said destination address conversion means.

16. The datagram transmission device according to claim 15 wherein;

10           said destination address conversion means determines whether or not said destination address corresponds to a destination address in respect of which, as transmission control, only transmission is performed, and, if it corresponds, outputs transmission execution information to said transmission control execution means; and

15           said transmission control execution means execute transmission control using said transmission execution information in the case of said transmission control execution means input said transmission execution information.

17. The datagram transmission device according to claim 15 wherein said destination address conversion means converts a combination of information belonging to the second layer of the protocol and said destination address to said index value.

18. The datagram transmission device according to claim 17 wherein said information belonging to the second layer of the protocol is a virtual channel identifier of the asynchronous transfer mode.

19. The datagram transmission device according to claim 1  
wherein said datagram transmission device is an Internet  
protocol router.

20. The datagram transmission device according to claim 1  
5 wherein said datagram transmission device is an Internet  
protocol switch.